

The opinion in support of the decision being entered today was not written for publication in a law journal and is not binding precedent of the Board.

Paper No. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BRETT B. STEWART

Appeal No. 1999-2339
Application No. 08/598,098

HEARD: APRIL 16, 2002

Before KRASS, BARRY, and BLANKENSHIP, Administrative Patent Judges.

KRASS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1-14, all of the claims in the application.

The invention is directed to directional microphones. In particular, a plurality of microphones, each producing electrical signals representative of sound signals incident thereon are

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spaced apart from each other. A signal processor receives the electrical signals and produces a specific direction and width sound signal by processing the electrical signals according to a specific sound direction.

Representative independent claim 1 is reproduced as follows:

1. A sound processing apparatus comprising:

a plurality of microphones spaced apart from each other, each microphone producing electrical signals representative of sound signals incident thereon; and

a signal processing unit receiving the electrical signals and producing a specific direction and width sound signal by processing the electrical signals according to a specific sound direction.

The examiner relies on the following references:

Elko et al. (Elko)	4,802,227	Jan. 31, 1989
Yanagawa et al. (Yanagawa)	5,233,664	Aug. 03, 1993
Gale	5,291,556	Mar. 01, 1994
Chang et al. (Chang)	5,581,036	Dec. 03, 1996
		(filed May 23, 1994)

Claims 1, 7 and 13 stand rejected under 35 U.S.C. 102(b) as anticipated by Elko.

Claims 1-6 and 8-14 stand rejected under 35 U.S.C. 103. As evidence of obviousness, the examiner offers Elko with regard to claim 8, adding Gale with regard to claim 9, and further adding

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Chang with regard to claims 5 and 6. With regard to claims 1-4 and 10-13, the examiner offers Chang and with regard to claim 14, the examiner cites Elko and either one of Yanagawa or Gale.

Reference is made to the briefs and answer for the respective positions of appellant and the examiner.

OPINION

Turning first to the rejection of claims 1, 7 and 13 under 35 U.S.C. 102(b), since claims 7 and 13 are grouped together with claim 1 [top of page 4 of the principal brief], we will focus on claim 1.

Claim 1 calls for a sound processing apparatus comprising a plurality of microphones spaced apart from each other. This is taught by Elko at column 2, lines 53-54, wherein "an array of electroacoustic transducers having a prescribed directional response pattern..." is described. The claim says that "each microphone produc[es] electrical signals representative of sound signals incident thereon." That is what microphones do, but this is also described in Elko, at column 2, lines 55-57, wherein the array of transducers "...receives sounds from the preferred location as well as a plurality of unwanted sounds from other locations *and produces signals responsive thereto*" [emphasis

added].

Claim 1 next calls for a signal processing unit for receiving the electrical signals. This is described by Elko at column 2, lines 61-66, wherein the processing unit receives the electrical signals at analysis time intervals and, during each analysis time interval, "a set of weighting signals are formed to adjust the directional response pattern of the array and the received sound signals are combined with the weighting signals to produce an output signal substantially representative of the sound signal from the preferred location sound source in each analysis time interval." Thus, the signal processing unit of Elko processes the electrical signals according to a specific sound direction and produces a specific direction and width sound signal, as claimed.

Appellant argues that Elko teaches that a directional response pattern is "adaptively adjusted" during successive time intervals to maintain the operator location in the main beam of the pattern while developing null points in the directional response pattern at each noise source although the noise source may move and that, unlike the presently claimed invention, "Elko is noise source dependent" [principal brief-page 4]. However,

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instant claim 1 mentions nothing about noise source dependency or independency.

Accordingly, the claim does not preclude Elko's noise source being "dependent."

At page 5 of the principal brief, appellant argues:

Elko's adaptive adjustment does not permit selecting the beam width to be narrower than the distance between noise sources. The ability to select beam width in the present invention need not depend on the existence of noise sources, as in Elko. That is to say, Elko's width is not specifically selected, but rather it is adaptively adjusted in response to the relative locations of the desired source and other noise source(s). In contrast to Elko, the present invention does not need noise sources to select a beam width. Indeed, in the present invention, when a beam is directed at a desired sound source, the appearance or disappearance of extraneous noise sources need not result in changing the beam width, as in Elko.

However, we find this argument to be immaterial to the subject matter at hand since appellant has pointed to no specific claim language on which the argument is based and, in fact, we find no language in claim 1 regarding selection of beam width being independent of noise sources or that the appearance or disappearance of extraneous noise sources need not result in changing the beam width. Arguments directed to limitations not appearing in the claims are not persuasive. In re Self, 671 F.2d

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1344, 1348 and 1351, 213 USPQ 1, 5 and 7 (CCPA 1982).

We do note that in the portion of appellant's argument quoted supra, appellant admits that Elko teaches an "adaptive adjustment" of a directional response pattern. Thus, it would appear, contrary to appellant's argument, that Elko at least teaches a general adjustment of the beam width.

To whatever extent appellant is relying on the claim language, "producing a specific direction and width sound signal...", appellant has not adequately explained why Elko does not teach such a limitation in view of Elko's disclosure at column 2, lines 51-67.

Moreover, referring to Figure 6 of Elko, it can be seen that the major lobe 610 is pointing toward a predefined location SL while the noise sources NS1, NS2, NS3 and NS4 are pointing towards nulls between the nodes so that the noise sources are not picked up. Instant claim 1 does not preclude the noise sources pointing to nulls. The claim requires that the signal processing unit produce a "specific direction and width sound signal by processing the electrical signals according to a specific sound direction." The "specific sound direction" in Elko is the direction of the main node 610 toward sound source SL and a specific direction and width sound signal is produced by the

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processor in accordance with this specific sound direction. So while it may be true that Elko produces a specific sound direction and width sound signal according to a specific sound direction *and* another noise source, Elko does show that the production of a specific sound direction and width sound is produced according to *at least* a specific sound direction and the claim does not preclude Elko's further use of a noise source.

Accordingly, we will sustain the rejection of claims 1, 7 and 13 under 35 U.S.C. 102(b).

Since the rejections of claims 8 and 14, which are grouped together with claim 1 by appellant, are not separately argued, and these rejections rely in part on Elko, we will also sustain the rejection of claims 8 and 14 under 35 U.S.C. 103.

Turning to the rejection of claims 1-4 and 10-13 under 35 U.S.C. 103, the examiner relies on Chang. It is the examiner's position that, since Chang discloses the receipt of reflected ultrasonic sound signals in a multimicrophone array, and uses variable delays implemented by various sampling times to form a directed beam at a desired point, in order to scan the reflection field to reconstruct an image, the beam must be focussed at different points and this must be done by varying the relative delays along the array to slew the beam direction in

azimuth. See pages 4-5 of the answer. The examiner specifically points to column 2, lines 40 et seq. for the teaching of, in the case of dynamic focusing, changing the delay time of each delay. The examiner also contends that, in Chang, the variable sampling time implements the variable delay and that it is inherent that any beam has a specific beam width.

The examiner's rationale appears reasonable in view of the rather broad language of claim 1 and, its method counterpart, claim 10.

Appellant's principal argument in this regard is that there is no teaching or suggestion, in Chang, of the "specifically selected beam width" [principal brief-page 5]. The only claim in this group which recites a "specific beam width" is claim 13. Thus, the argument is not even germane to claims 1-4 and 10-12. With regard to claim 13, this claim does not recite that the "specific beam width" is "selected," as now argued by appellant. Accordingly, appellant is, again, arguing limitations which do not appear in the claims and, therefore, the argument is not persuasive.

Moreover, appellant admits, at page 2 of the reply brief [The width of Chang's beam is determined by the configuration of the transducer array..."], that Chang discloses a selective beam

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width, i.e., the selection of the transducer array configuration will determine the beam width. Accordingly, we find no

convincing argument by appellant to overcome the examiner's prima facie case of obviousness.

Appellant's other arguments, relative to Chang, regarding dynamically focussing a beam at a plurality of independent points on an object rather than collecting all of the data within a prescribed beam [principal brief-page 5; reply brief-page 2] are, again, directed to limitations not appearing in the claims. If these argued features do, somehow, refer to certain claim limitations, appellant has not pointed out the specific claim language to which he refers.

Accordingly, we will sustain the rejection of claims 1-4 and 10-13 under 35 U.S.C. 103.

Regarding the rejection of claim 9 under 35 U.S.C. 103 over Elko and Gale, the examiner clearly explains the rejection at pages 5-6 of the answer.

Appellant argues that Elko's taps, in Figure 1, do not have "adjustable relative time delays" as recited in claim 9, but, instead, they have "fixed" relative time delays. Moreover, appellant argues, there is no teaching of "computer controlled

sound processing." It is appellant's position that the plurality of microphones positioned around the display of a computer in combination with a sound processor controlled by a computer and the adjustable relative time delay are separately patentable features.

Gale clearly suggests the arrangement of microphones around a display and appellant does not appear to pursue this argument. Elko clearly teaches a computer-controlled sound processor. Rather, the issue hinges on whether Elko teaches or suggests the claimed "adjustable relative time delays." The examiner's response to appellant's argument that Elko's taps are "fixed" is to state that "[s]ince Elko has to aim the beam, the delays for different transducers have to be relatively adjustable..." [answer-page 8].

While the disclosure of Elko does appear to disclose aiming a beam (viz., "to direct the mainlobe of the prescribed directional response pattern toward the preferred location"-column 3, lines 9-11), this direction to a preferred location appears to be dependent on weighting signals of preceding analysis time intervals (column 3, lines 4-7). Since the examiner has not established that these "weighting signals" of Elko are related to "adjustable relative time delays," as

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claimed, we will not sustain the rejection of claim 9 under 35 U.S.C. 103.

Similarly, we will not sustain the rejection of claims 5 and 6 under 35 U.S.C. 103 because claim 5 calls for "variable sampling intervals" and we are unconvinced that the applied references suggest such variable sampling intervals.

CONCLUSION

We have sustained the rejection of claims 1, 7 and 13 under 35 U.S.C. 102(b). We have also sustained the rejection of claims 1-4, 8 and 10-14 under 35 U.S.C. 103. We have not sustained the rejection of claims 5, 6 and 9 under 35 U.S.C. 103.

Accordingly, the examiner's decision is affirmed-in-part.

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No time period for taking any subsequent action in
connection with this appeal may be extended under 37 CFR
§ 1.136(a).

AFFIRMED-IN-PART

ERROL A. KRASS)	
Administrative Patent Judge)	
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LANCE LEONARD BARRY)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
)	
)	
HOWARD B. BLANKENSHIP)	
Administrative Patent Judge)	

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EK/RWK
FOLEY AND LARDNER
3000 K STREET NW
SUITE 500
P.O. BOX 25696
WASHINGTON, DC 20007-8696